

whereas some research on animals could very well be inadmissible.

In the long run, biomedical research aims at the alleviation of human suffering and pain. If he accepts this as his guiding principle, it is the duty of the scientist to arrange even his daily research activities in keeping with this principle. Moreover, scientists have an obligation towards the general public to justify their activities. The once romantic image of an esoteric scientific community of unworldly grey-haired men who do their extremely learned research in dark rooms inaccessible to the uninitiated, is now no longer accepted. The US Public Health Service has understood this and has begun an unprecedented and expensive effort to promote the importance of animal experimentation (8). A spokesman for the service declared they are not intending to ignore the criticism from the animal right movements and that they will explain the use of animals in biomedical research to the public just as they explain everything else they do. Surely these and other initiatives will create a climate of openness and mutual understanding. In such a climate there will be no room for dogmatic arguments that seem not to listen to opposing views, like the one proposed by Martin (1). The feasibility of animal experiments needs to be discussed openly and democratically, but without man at the centre of the universe.

## References

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## Man is qualitatively different from animals

SIR

Mr D'Hooghe's letter needs reply since he puts words into my mouth that do not follow from what I wrote and since I disagree with his views on animal experimentation. An analysis of his stance shows that the principles on which he bases his attitude to animal experimentation are twofold:

1. Man is part of a biological continuum with the rest of nature, therefore he is part of a moral continuum.
2. Rights should be based upon an individual 'grasping' that it is a self.

I wish to comment on both these propositions:

1. The view that rights should arise from the biological status of an individual is the narrow view of the biologist who does not take account of the totality of man. Man is part of a biological continuum (I stated so in my article) that extends quantitatively from man to amino acids, however man has something that is qualitatively different from the rest of the known universe. This human principle is more valuable than the biological continuum and man's rights arise from it. What is a right? Where does it come from? Aristotle's definition is a right is that which must be given to a man. The right must have a reason that supports it. This reason is pragmatic and is supported by an analysis of the consequences of not having the right. If there is unavoidable competition between man and another species then man must be given certain rights which if he lacked might lead to his downfall. Even though animals are immensely valuable, man is more valuable since he is qualitatively different in a superior way. D'Hooghe says that I distinguish between man and animals on 'mental capacity'. If this means ability to reason, to remember and use tools alone that is not so. The difference lies in man's possessing the ability to put two abstract concepts together and produce a third abstract concept which is different from the original two. If an apparatus, of whatever sort, has to be like the thing it manipulates (by definition), then

man must have an abstract apparatus. This is valuable because it produces valuable things. Man therefore has to be protected more than any other thing. There is no evidence that animals can put two abstract concepts together and produce a third that is different. However, I am not absolutely certain that this is so. The level of certainty falls within Aristotle's definition of moral certainty, ie one has sufficient level of certainty to take action, but one acknowledges the possibility of the opposite being true. This is the level of certainty that pertains in most philosophical conclusions, but not in biology where the possibility of a conclusion not occurring by chance can be calculated.

The day I read Mr D'Hooghe's letter, I attended a performance of Handel's *Ricardo Primo*, with his thoughts on man and animals in my mind. The opera contained abstraction on abstraction and was watched by human beings taking part in a complex cultural event. It was a story of the most subtle communication between individuals. It concerned concepts of history and geography. An understanding of the opera required an understanding of, on the one hand, the origin of the nation state, on the other, the relationship between physical and spiritual love. It related to concepts of religion and ceremony. All this was presented in language and music. The action potential in the recurrent laryngeal nerve of the singers lay on a continuum of action potentials from man to the squid. Yet that necessary biological function was all but irrelevant to the true value of the human activity on the stage. The individual and collective behaviour I was observing was qualitatively different from any purely biological activity in the world. This is understood by both mediaeval scholastic and Marxist philosophers alike, but not by biologists who see no further than man's physical destiny. Of course the deer running through the greenwood is valuable, but man's behaviour is more valuable. Both should be valued, but if there is competition as in the need for animal experimentation for human medical progress, then man must come first.

Biologists should ask themselves what is the destiny of the world. Is it biological excellence via research or

is it personal and cultural evolution primarily via man's non-biological abilities?

To answer my arguments Mr D'Hooge needs to challenge me on whether man is or is not qualitatively different from other animals.

2. A proposal that a grasp of an individual's 'selfness' is a criteria for the bestowal of rights has dangerous implications. If he believes that experimentation on human beings who are unconscious (who therefore cannot grasp that they are a 'self') is justified, then I cannot agree. Rights should be given to all men. In some cases of severe brain damage or mental subnormality, it could be possible to argue that the individuals concerned were not human. However, human rights should be bestowed as widely as possible even at the expense of giving them to some individuals who may not be human, but who clearly have the potential to be human. This again is based upon the value of a human being and a desire not to deny rights even if it means bestowing them inappropriately in some cases. This is not a dogmatic concept, it is liberal and democratic.

Furthermore, by using 'self' as a definition for rights, we have no way of drawing a line. Molluscs can be educated by using their memory (1) they may therefore have a grasp of 'self'. Would Mr D'Hooge refrain from eating a live oyster?

Ethics should be based upon principle. Mr D'Hooge fails to discuss the principles on which my conclusions are based. The debate on animal experimentation must firstly define the nature of man and his destiny, otherwise we do not have the basis for an equal discussion.

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## Death in Denmark: reply to Lamb

SIR

David Lamb's reply to my article *Death in Denmark* (1, 2), is unduly sensitive to the wrong points, and as a result leaves my central contention virtually untouched. I argued, against reductionist and essentialist conceptions of life and death, that major physical functions such as persistent spontaneous circulation *count* for the life of a human being, and that brain-centred conceptions of human death wrongly exclude the significance of the persistent heartbeat – a significance that is widely and deeply held in Western culture. Lamb thinks that I am relying on dogma, on a 'revelatory' appeal to authority, and on the 'dismissal of rationality and argument'; whereas in fact I am *addressing* the relation between holding values and giving reasons, and my criticisms of brain-centred conceptions of human death rely on arguments about which Lamb is silent, conspicuously the *reductio* concerning the cremation of the so-called 'beating heart cadaver'.

If in making my case I had indeed relied largely on 'revelations' about what Wittgenstein might have said to a coterie of disciples (or learned from his bedmaker), then Lamb would have rightly found appeal to *this* authority disturbing. But I didn't. I appealed simply to the importance of the heartbeat in everyday experience of life and death; and I supported this way of proceeding with the view – which seems to me to be incontestable – that reasons alone can neither generate nor explain the values that we hold. Reasoned analysis can of course show us when values conflict, or when we fail to hold to them consistently. And we can often give reasons why we prefer certain courses of action to others. But we cannot indefinitely give reasons why we hold the values that underlie those preferences. Reason-giving comes to an end sooner or later; I'm sure that Lamb understands and accepts this point perfectly well. Pointing it out is to engage in argument and analysis, not to dismiss them.

Now does it follow from this (as Lamb seems to complain) that nothing can be said in reply to assertions which, relying ultimately on convictions about values, stand independent of rational explanation? Well of course it does not; what follows is simply that eventually the disputed assertions will reveal a *moral disagreement* rather than a

technical problem in analysis. I have tried consistently to make this clear in my criticism of exclusively brain-centred conceptions of human life and death. If in this context Lamb finds it unhelpful or distracting (as he seems to) for me to mention that Wittgenstein drew philosophical attention to the limitations of reason-giving, then I am perfectly happy to leave such references out (indeed I am happy to defer to Lamb's superior scholarship in matters Wittgensteinian). My *argument* remains quite unaffected by the omission and, I think, stands on his own feet.

Lamb denies that he is guilty of the essentialism with which I charge exclusively brain-centred conceptions of death, and I readily accept that he specifically disowns a reductionist view of the person as no more than the brain. Again, I regard his emphasis on the bodily integration of the human organism as richer and more sophisticated than Dr Pallis's elevation of the twin capacities for consciousness and respiration. I take Pallis's essentialism to lie in thinking that when these capacities are lost, what remains is *of no concern or significance* to the question of whether we still behold a dying – as opposed to a dead – human being. The irreversible destruction of brainstem function may well be lethal over time for the remaining bodily functions; but this shows only that, over time, the brainstem is necessary for these functions to continue. Now, while phenomena such as cardio-vascular function persist, I argue that they constitute the remaining, albeit short, life of the human being. In denying this Pallis is, I think, reducing the notion of the life of the human being to those functions he thinks crucial.

Now if Lamb takes a similarly robust view of the capacity for bodily integration, I think the charge holds good in his case too. But I readily acknowledge his greater caution – and indeed did so in my original article. As against this caution, Lamb's reply makes much of the inability of 'brainstem-dead' patients *spontaneously* to maintain their internal milieu. But losing this capacity does not rule out the spontaneity of other functions, notoriously cardio-vascular function, for a while. Now if Lamb thinks that the persistence of these other functions is irrelevant *and of no interest or concern*, my charge of essentialism stands.

Perhaps Lamb may not, when pressed, really hold this view at all. The acid test would be whether he would be willing for someone who met all the criteria for brainstem death to be